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EXAMINER

CHAU, COREY P

ART UNIT PAPER NUMBER

2644

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/876,160

Applicant(s)

IKEDA, MASA HARU

Examiner

Corey P. Chau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3,7 and 14-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,3,7, and 14-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 14-17 are objected to because of the following informalities:

Claim 14, line 18 recites "the microphone though", which should be replaced with "the microphone through".

Claim 15, line 17 recites "the microphone though", which should be replaced with "the microphone through".

Claim 16, line 18 recites "the microphone though", which should be replaced with "the microphone through".

Claim 17, line 17 recites "the microphone though", which should be replaced with "the microphone through". Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. Claims 14-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 14 recites the limitation "the microphone output member" in line 18.

Claim 15 recites the limitation "the microphone output member" in line 17.

Claim 16 recites the limitation "the microphone output member" in line 18.

Claim 17 recites the limitation "the microphone output member" in line 17. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 14-16, 2-3, 7, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6104818 to Korner in view of U.S. Patent No. 6084972 to Halteren et al. (hereafter as Halteren).

6. Regarding Claim 14, Korner discloses a capacitor type of microphone having a microphone output terminal and a microphone common terminal, the microphone output terminal being connected to an output line through which a microphone signal is outputted (Fig. 1), the microphone comprising:

movable electrode vibrating in response to a sound vibration (22);

a fixed electrode arranged face to face with the movable electrode (24);

a first amplification means (20) for buffer-amplifying a terminal voltage generated between both the movable electrode and the fixed electrode;

second amplification means (Figs. 2-8; column 2, line 30 to column 3, line 20) provided with an FET structured (18) (i.e. transistor 18 is illustrated as a bipolar NPN-transistor, but might also consist of a field effect transistor-JFET or a MOSFET) in to a gate-common amplification means and having a source electrode that receives an output current of the first amplification means (Fig. 3) and having a drain electrode that supplies an amplified current through the microphone output terminal and cascaded to

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an output terminal of the first amplification means between the microphone output terminal and the microphone common terminal connected to a gate terminal of the FET (Figs. 2-8).

Korner does not expressly disclose a bypass capacitor electrically connected between the microphone output terminal and a microphone common terminal, the bypass capacitor operating to bypass a high frequency signal coming from outside the microphone through the microphone output member. However it would have been obvious to one having ordinary skill in the art to utilize a bypass capacitor across output terminals of the microphone in order to produce an output free of interference because at high frequency the capacitor would act as a short circuit, which will not allow signals to pass and at low frequency the capacitor acts as an open circuit, which will allow signals to pass, as taught by Halteren. Halteren discloses if high frequency interference signals may be generated, e.g. as a result of the vicinity of a GSM telephone apparatus, these signals are short-circuited to ground by the capacitive coupling. Thus, the signal that can finally be derived at the output is free of such interference signals (Fig. 1A; column 3, lines 24-41). Therefore it would have been obvious to one having ordinary skill in the art to modify Korner as modified with the teaching of Halteren to utilize a capacitor across output terminals (Korner, Fig. 3) in order to produce a signal free of interference (i.e. a bypass capacitor having one end electrically connected to a signal output terminal of the second amplifying means and having the other end electrically connected to a common output terminal of the second amplifying means, the bypass capacitor operating to bypass high frequency signal from outside the microphone and

the signal output terminal of the second amplifying means being connected to the microphone output terminal) because at high frequency the capacitor would acts as a short circuit to not allow signals to pass and at low frequency the capacitor acts as a open circuit to allow signals to pass.

7. Regarding Claim 15, Korner discloses a capacitor type of microphone having a microphone output terminal and a microphone common terminal, the microphone output terminal being connected to an output line through which a microphone signal is outputted (Figs. 2-8), the microphone comprising:

- movable electrode vibrating in response to a sound vibration (22);

- a fixed electrode arranged face to face with the movable electrode (24);

- a first amplification means (20) for buffer-amplifying a terminal voltage generated between both the movable electrode and the fixed electrode;

- second amplification means (Figs. 2-8; column 2, line 30 to column 3, line 20) provided with a junction type of transistor structured into a base-common amplification circuit having an emitter that receives an output current of the first amplification means (Fig. 3) and having a collector that supplies an amplified current through the microphone output terminal and cascaded to an output terminal of the first amplification means between the microphone output terminal and the microphone common terminal connected to a base of the transistor (Figs. 2-8).

Korner does not expressly disclose a bypass capacitor electrically connected between the microphone output terminal and a microphone common terminal, the bypass capacitor operating to bypass a high frequency signal coming from outside the

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microphone through the microphone output member. However it would have been obvious to one having ordinary skill in the art to utilize a bypass capacitor across output terminals of the microphone in order to produce an output free of interference because at high frequency the capacitor would act as a short circuit, which will not allow signals to pass and at low frequency the capacitor acts as an open circuit, which will allow signals to pass, as taught by Halteren. Halteren discloses if high frequency interference signals may be generated, e.g. as a result of the vicinity of a GSM telephone apparatus, these signals are short-circuited to ground by the capacitive coupling. Thus, the signal that can finally be derived at the output is free of such interference signals (Fig. 1A; column 3, lines 24-41). Therefore it would have been obvious to one having ordinary skill in the art to modify Korner as modified with the teaching of Halteren to utilize a capacitor across output terminals (Korner, Fig. 3) in order to produce a signal free of interference (i.e. a bypass capacitor having one end electrically connected to a signal output terminal of the second amplifying means and having the other end electrically connected to a common output terminal of the second amplifying means, the bypass capacitor operating to bypass high frequency signal from outside the microphone and the signal output terminal of the second amplifying means being connected to the microphone output terminal) because at high frequency the capacitor would act as a short circuit to not allow signals to pass and at low frequency the capacitor acts as an open circuit to allow signals to pass.

8. Claim 16 is essentially similar to Claim 14 and is rejected for the reasons stated above *apropos* to Claim 14.

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9. Regarding Claim 2, Korner as modified discloses second amplification circuit includes drive means, in which a power supply to the drive means is configured so that the power is obtained as a constant current from outside the microphone via the output line connected to the microphone output terminal (Fig. 3; column 2, line 47 to column 3, line 5).

10. Regarding Claim 3, Korner as modified discloses the second amplification circuit includes drive means, in which a power supply to the drive means is configured so that the power is temporarily obtained for storage through the output line connected to the microphone output terminal according to voltage values and the stored voltage is used when obtaining the power is stopped (abstract; Fig. 3, references 12 and 14; column 2, line 47 to column 3, line 5).

11. All elements of Claim 7 are comprehended by Claim 14. Claim 7 is rejected for the reasons stated above apropos to Claim 4.

12. Claim 17 is essentially similar to Claim 15 and is rejected for the reasons stated above apropos to Claim 15.

13. Claims 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6104818 to Korner in view of U.S. Patent No. 6084972 to Halteren as applied to claims 14-16, 2, 3, 7, and 17 above, and further in view of U.S. Patent No. 4443666 to Cote.

14. Regarding Claim 18, Korner as modified does not expressly disclose a member for shielding the microphone from electromagnetic waves by surrounding the movable

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electrode, the first amplification means, and the second amplification means. However it would have been obvious to one having ordinary skill in the art to provide a member for shielding the microphone comprising the movable electrode, the fixed electrode, the first amplification means, and the second amplification means in order to avoid external electromagnetic interference as taught by Cote. Cote disclose a capacitor microphones in which a permanently polarized dielectric, or electret is used, requires a local preamplifier circuit because of their low output which must be well shielded to avoid external electromagnetic interference (column 1, lines 6-16; column 1, line 67 to column 2, line 5; column 2, lines 43-68). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Korner with the teaching of Cote to shield the microphone comprising the movable electrode, the fixed electrode, the first amplification means, and the second amplification means in order to avoid external electromagnetic interference.

15. Regarding Claim 19, Korner as modified does not expressly disclose the output line is located outside the shielding member. However it obvious to one having ordinary skill in the art at the time the invention was made to provide the output line is located outside the shielding member in order to avoid external electromagnetic interference to the movable electrode, the first amplification means, and the second amplification means.

16. Claim 20 is essentially similar to Claim 18 and is rejected for the reasons stated above apropos to Claim 18.

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17. Claim 21 is essentially similar to Claim 18 and is rejected for the reasons stated above apropos to Claim 18.

18. Claim 22 is essentially similar to Claim 19 and is rejected for the reasons stated above apropos to Claim 19.

19. Claim 23 is essentially similar to Claim 18 and is rejected for the reasons stated above apropos to Claim 18.

20. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6104818 to Korner in view of U.S. Patent No. 6084972 to Halteren as applied to claims 14-16, 2, 3, 7, and 17 above, and further in view of U.S. Patent No. 5596638 to Paterson et al. (hereafter as Paterson).

21. Regarding Claim 24, Korner as modified does not expressly disclose a decoupling capacitor electrically connected between an output side of the output line and the microphone common terminal, the decoupling capacitor reducing and RF signal impinging onto the output line. Paterson discloses capacitors to attenuate RF noise (Fig. 2; column 7, line 64 to column 8, line 9; column 8, lines 53-65). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Korner as modified with the teaching of Paterson to utilize capacitors in order to attenuate RF noise.

22. Regarding Claim 25, Korner as modified discloses a power supply electrically connected between an output side of the output line and the microphone common

terminal, the decoupling capacitor reducing an RF signal impinging onto the output line (Figs. 7 and 8).

Response to Arguments

23. Applicant's arguments filed 9/30/2005 have been fully considered but they are not persuasive.

24. With respect to Applicant's argument on page 10, stating that "Tanaka et al. and Korner, there are no teachings or suggestion concerning the circuitry as to how effectively connect the bypass capacitor and the second amplification means (circuit) to the output line", has been noted. However, the Examiner respectfully disagrees. Korner as modified (in view of Cote and Halteren) discloses a capacitor across the output of the second amplification means (circuit) in order to perform the operation of acting as a short circuit to not allow signals to pass when high frequency signals exist and acting as a open circuit to allow signals to pass when low frequency signals exist which produce a signal free of interference.

25. In response to applicant's argument on pages 9-10 that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., **employing the impedance conversion** to prevent the RF noise entering the microphone through the output line) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

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26. In response to applicant's argument on page 10, that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., **an electrical suppression technique** against such external electromagnetic waves) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

27. In response to applicant's argument that Halteren et al. discloses a bypass capacitor, but fails to utilize the impedance conversion provided by the second amplification means (circuit) in a combined manner with the bypass capacitor, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Conclusion

28. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 4158820 to Stanley discloses RF noise reduction.

U.S. Patent No. 4491689 to Boeckman discloses RF noise reduction

29. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

30. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey P. Chau whose telephone number is (571)272-7514. The examiner can normally be reached on Monday - Friday 9:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

January 9, 2006

CPC



HUYEN LE
PRIMARY EXAMINER